ARCHÆOLOGICAL NOTES

ON

ANCIENT SCULPTURINGS ON ROCKS

IN KUMAON, INDIA,

SIMILAR TO THOSE FOUND ON

MONOLITHS AND ROCKS IN EUROPE,

WITH OTHER PAPERS.

BY

J. H. RIVETT-CARNAC, ESQUIRE.

BENGAL CIVIL SERVICE.

Companion of the Order of the Indian Empire. Fellow of the University of Bombay. Fellow of the Society of Antiquaries. Fellow of the Royal Asiatic Society. Fellow of the Geological Society. Corresponding Member of the Imperial Museum, Vienna, &c. &c.

REPRINTED FROM THE JOURNAL OF THE ASIATIC SOCIETY OF BENGAL.

CALCUTTA:

PRINTED BY G. H. ROUSE, BAPTIST MISSION PRESS,

24, LOWER CIRCULAR ROAD.

1879.

ROCK NEAR CHANDESHWAR KAMAON INDIA
SHOWING ROCK WITH CUP MARKS

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ROUGH NOTES

ON SOME

ANCIENT SCULPTURINGS ON ROCKS IN KUMAON

SIMILAR TO THOSE FOUND ON

MONOLITHS AND ROCKS IN EUROPE.

BY

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C.I.E., F.S.A., M.R.A.S., F.G.S., &c.

At the meeting of the Society held in Calcutta in February, 1870, the existence on the tumuli of Central India of "cup marks" similar to those found on the Stone Circles and Monoliths of Northern Europe was briefly noticed by me (*see* Proceedings of the Asiatic Society for February, 1870, p. 57). It may interest the Society to learn that, during an autumn holiday in the Kamáoṇ hills, I have come across many other markings on stones and rocks closely resembling those described by the late Sir James Simpson in his 'Archaic Sculpturings'*, the work noticed at the meeting of the Society above referred to,—and that, on this occasion, the markings found have not been confined to cups and circles, but include rough sculpturings of a somewhat more defined type than those previously noticed.

2. At a point about 2½ miles south of Dwárá-Háṭh, and 12 miles north of the Military Station in Ránikhet in Kamáoṇ, the bridle road leading from the plains through Nainí Tál and Ránikhet to Baijnath, and thence on to the celebrated shrine at Bidranáth, is carried through a narrow gorge, at the mouth of which is a temple sacred to Maháleo, where the pilgrims who follow this route generally halt for a short time, and where from the position of the temple in the defile, the priest in charge can conveniently levy contributions on all passers-by. The temple will not be found marked on the one-inch-to-the-mile map of the Great Trigonometrical Survey, but it is locally known by the name of Chandeshwar,

* Archaic Sculpturings of Cups, Circles, &c., on stones and rocks in Scotland, England, and other Countries. By Sir J. Simpson, Bart., D.C.L., Edinburgh, Edmonton and Douglas, 1867.

and the above description will perhaps be sufficient to enable any who care to visit the spot to find its position without difficulty.

3. About two hundred yards south of the temple, towards the middle of the defile, and to the right hand of the traveller from Ránikhet to Dwárá-Háṭh, a rock partly covered with low brushwood rises at an angle of 45° to the height of some seventy feet above the stream. The rock has been much worn by the action of heat and damp, and to a passer-by would not at first sight appear to possess any interest, but when carefully examined in a good light, it will be found to be covered with "cup marks" and sculpturings, the principal forms of which have been figured in the accompanying rough sketches.

4. A reference to Sketches I to V in the accompanying plates will shew that in Europe, the "cup marks" or holes scooped out on the face of the rock, and noticed by me at the meeting of the Society above referred to, predominate. On the Chandeshwar Rock, in a space measuring 14 feet in height by 12 in breadth, upwards of 200 such marks may be counted. They are of different sizes, varying from six inches to an inch and a half in diameter, and in depth from one inch to half an inch, and are generally arranged in perpendicular lines presenting many permutations in the number and size and arrangement of the cups. These exactly correspond with the "First Type" of the marks found in Europe described at page 2 of Sir J. Simpson's work above referred to, and figured in many of the plates with which his book is illustrated.

5. In the portion of the rock shewn in Plate II, commencing from left to right and taking the upper ledge, first comes a row of four small cups, then three rows of cups each 3¼ inches in diameter, the first line containing nine, the second seven, and the third seven cups. Then follows a row of 15 cups somewhat smaller in diameter, the 11th and 15th (the last) of which are distinguished by an incised ring surrounding each cup, corresponding exactly with the "Second Type" figured at Plate I, and described in page 4, of Sir J. Simpson's work.

6. Then follow three lines containing respectively 17, 14, and 15 small "cups". The 13th and 17th (the last) cups of the first row are "ringed" and belong to the "second type". The last cups of the second and third line are distinguished by what Sir J. Simpson describes (page 5) as a "groove or gutter", leading from the cups downwards, and of which several specimens will be found figured in his work. The next group of three lines consists of 8, 7, and 6 small cups respectively, surrounded by three lines in the shape of a fork. Then follow 11 lines, first two lines containing respectively 6 and 5, then three lines of 6, 6, and 7, then another arrangement of three lines with 8, 10, and 11, and lastly yet another arrangement of three lines each of 8 cups. All these cups are small and similar in type to those already noticed.

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The rock is at an angle of about 45° The large markings are a little more than 3 in in diameter and ½ in in depth but they are weatherworn and not so distinct as in the sketch

7. On the lower ledge beneath the first arrangement of three lines of large cups, a further combination of three is noticed, a large cup, then a line of four, then three. These are weather-worn and somewhat indistinct, and may perhaps have been continuations of the upper line. To the left is yet another combination of three, two large cups, the upper one of the first line with a groove, the two next both grooved, and the lower groove joining the two cups, the third also grooved. Then follow two lines containing the one six, the other seven large cups.

8. Sketch III, on plates III and IV, shews cup marks on three separate portions of the rock, the first (A) to the left containing eight cups, one of which is grooved, the second (B) a straight row of sixteen cups with a row of four running off at right angles in the centre. The last (C) is a curious arrangement of thirteen cups all with grooves or gutters similar to those figured in Plates IX—XIV and XX of Sir J. Simpson's work.

9. The sculpturings shewn in Sketch IV of pl. III are of a somewhat more elaborate type. The first (A) has perhaps been intended for a cobra, or a leaf. The second (B) is curious from the combination of lines and large cup-marks, some of which are six inches in diameter, and in shape is not unlike the "Swastiká." The third (C) is of a somewhat similar type, and may be allowed to claim relationship to Fig. 15, Plate II, of Sir J. Simpson's work. The sizes of the markings are roughly noted on the sketches. I have neither the time nor the appliances at present to draw them to scale.

10. From the villagers, and from the old priest at the temple hard by, no information was to be obtained of the origin of these markings, beyond that "they were so old that the oldest man in the village had no "knowledge of who had made them, nor had they been made in the time "of their father's father, but they were most probably the work of the "giants or the goálás (herdsmen) in days gone by." Much information was perhaps hardly to be expected from the class of persons questioned, but the subject of their possible origin will be noticed more in detail in later paras. of these notes.

11. On visiting the temple sacred to Mahádeo at the entrance to the gorge, I could not help being struck by the peculiar construction of many of its shrines as bearing a marked resemblance to these rock markings. In addition to the principal shrine, placed within the temple itself, a massive little structure, built up of large stones, many of which would appear to have been taken from Buddhist ruins so plentiful in the neighbourhood of Dwárá-Háṭh, I counted 37 minor shrines within the walled enclosure by which the temple is surrounded. These consist mostly of a rough pedestal formed of loose stones surrounded by a *Mahádeo* and *yoni*.

The *yoni* in the largest of these shrines was a solid block of stone, cut to the well-known "jew's-harp" shape, the upright *Maháideo* being slightly carved at the summit and base. Some half a dozen others were more or less solid and well made according to the conventional construction of these symbols. In one case the stone which did service for the *yoni*, was the cushion-shaped finial of some Buddhist temple, the *Mahádeo* being represented by a carved head with high raised cap broken off from some neighbouring ruin. The fragment had been inserted cap downwards in the square hole by which the cushion had been fixed on to the top of the original structure.

12. The remaining shrines were of a much poorer type. But this last class was to me much the most interesting, as suggesting a possible connection between the rock markings and *lingam* worship. Rough sketches of these types will be found in plate III, which accompanies this paper. The position and arrangement of these symbols and the veneration paid to them, some having been quite recently decked with small offerings of flowers, left no doubt that they equally with the larger and more solid shrines represented the *Mahádeo* and *yoni*. But whereas in the first noticed and better class, as will best be explained by the section E in plate III, the *Mahádeo* is represented by an upright stone, this other and poorer type is without the upright, and is apparently a conventional rendering, or sketch of these symbols, roughly cut on the stone, the inner circle representing the *Mahádeo*, the outer circle the *yoni*, the line or lines the gutter, by which the libations and offerings are drained off from this as well as from the more elaborate class of *Mahádeos*.

Of this poorer class, *i. e.*, those without the upright, some 20 or 30 may be counted in the Chandeshwar enclosure, from the well-defined inner and outer circles shewn in Fig. A, sketch IV of pl. III, to the very poorest class in Figs. B and C, sketch V, which is little more than a rough cup-mark surrounded by a circle and "gutter", cut on an easily worked slab, split off from some neighbouring rock. On one such slab I found cup-marks together with the symbols, but as the cups were in all probability on the slab before it was split off from the rock and made to do service on the top of the shrines, no particular significance can be claimed for this circumstance. To facilitate reference, in case no copy of Sir J. Simpson's work is at hand, the several types noticed in the Archaic sculpturings have been copied, and accompany this paper.

13. In the centre of the yard, is a monolith *Mahádeo* of $4\frac{1}{2}$ feet in height above the ground, shewn in pl. IV, sketch VI, fig. A. It has no markings on it,—but together with all its surroundings seems very old. The priest in charge of the temple held that most of the shrines were very old, and accounted for their large number by saying that the yard was the

burial-place of men of great sanctity, some of whom had been brought from great distances for interment there, and that Mahádeos of an elaborate or poor class were placed over the tombs according to the means of the deceased's friends. I have at this moment no means of verifying whether any particular class of Hindus are buried in the hills, or whether my informant intended to convey that ashes only were deposited beneath the shrines, but on this point there will be no difficulty in obtaining information.

14. A few days later I visited, in company with Mr. William Craw, the proprietor of the beautiful Dúnagiri estate, the summit of the Paṇḍakoli (Col du Géant ?) mountain, which rises to a height of nearly 8,000 feet above the sea, to the north-east of the Dúnagiri Tea Factory. Here we found a small open place of worship, composed of two stone circles of the shape and dimensions shewn in pl. IV, Fig. B, sketch VI. The outer circle was of rough stones piled one on the other, with large stones at the entrance. The inner circle was partly of large stones about 3½ feet measuring above the ground, partly of smaller ones—very large stones not being available on the summit. The entrance was to the south. The inner circle was 8 feet, the outer 16 feet in diameter. In the centre of the inner circle were several *Mahádeos*, stones split off from the neighbouring rocks and roughly shaped. The shrine was open to the elements on all sides, save where it was partially sheltered by a wild guelder rose to the branches of which some rags had recently been attached as votive offerings by visitors to this place of pilgrimage. A small iron lamp, an old bell, and three small tridents, or '*trisuls*', (from the summit of the hill, by the way, a grand view of the three snow peaks of the Trisul mountain and of Nanda Deví may be obtained) completed the furniture of this rustic temple. No priest lives on the hill, which is too cold, jungly, and inaccessible for lengthened sojourn, but a fair is, I learn, held there in the spring, when many pilgrims, chiefly barren women, visit the shrine.

15. The construction of the temple, as shewn in pl IV, sketch VI, fig. B., appears of some interest when considered in connection with the rock cuttings and shrines at Chandeshwar, some 15 miles distant. Here, as the sketch will shew, are two circles, complete save where the "gutter" forms the entrance. The *Mahádeos* are in the centre of the inner circle.

16. Another circumstance perhaps deserving of notice is the position of a monolith Mahádeo, 5½ feet above the ground, situated 8 feet south-west of the shrine, a second monolith of almost the same size was 80 feet due west of the first. If I remember right, the shape of the temple is the same, or nearly the same, as that of Stonehenge, and Avebury, and the outer monolith is in the same position to the Paṇḍakoli shrine, as the "*Friar's Heel*" is to Stonehenge.

17. Local tradition ascribes the construction of the temple to the Pándús from whom the hill takes its name. In the small lake, visible from the summit, and about 6 miles north-west, the Pándús are supposed in days gone by to have washed their garments, whilst the hill top, with its, for the Himálayas, broad expanse of grassy level, was the drying ground for the Pándú linen. Mr. Craw, who with his gun and dogs has visited most of these little-known recesses of the Himálayas, has kindly promised to keep a look-out for similar remains during his sporting excursions.

18. Subsequently, on the march between Dúnagiri and Sameshwar, I came across some more monoliths, on the right hand side of the road, close to the Lodh Tea Factory. They are apparently the remains of what once was a considerable structure. In shape the monoliths exactly resemble the Chandeshwar Mahádeo. But on the one is carved a circle intended perhaps for the moon; on the other, what looks like a sun. If I mistake not, there is supposed to be some connection between sun and moon worship and the worship of the *Mahádeo* and the *yoni*, the sun taking the place of the *Mahádeo*, the moon of the *yoni*.

19. Some three miles further on, on the right hand side of the road, just above a little village distinguishable by its Deodár trees, and a small temple belonging to the Bidranáth Mahant, I halted for a short time to examine a mass of boulders lying round a mound, which from a distance bore some resemblance to the tumuli common in Central and Southern India. On its summit was a shrine about two feet high of peculiar construction, consisting of a sort of box, like a Kistvaen, formed of four slabs of stone imbedded in the earth, a fifth and movable slab forming the top, or cover. Within, sheltered from the weather by these slabs, was a small stone Mahádeo, or *ling*, daubed with red paint, and a small iron lamp. Outside the Kistvaen was a second and smaller stone *Mahádeo*, and on it, apparently taking the place of the red paint, a cup mark.

28. A further examination of the site indicated the existence round the mound of an outer and inner circle of stones, the larger of about 30 feet in diameter. The mound was in the midst of irrigated, and well cared for rice fields, and the boulders, lying about in disorder, had apparently been disturbed to make way for the plough in the absence of a Kamáon "Sir J. Lubbock's Act" for the preservation of ancient remains. But the circular shape of the mound and of the arrangement of the boulders surrounding it, some of which were too heavy to be displaced, was still traceable. One of the boulders, a huge mass measuring 7 feet in height by 13 feet in length by 9 feet in breadth, which could successfully defy most attempts at displacement, had five rows of marks still traceable on it, whilst other rows much weather-worn could with some difficulty be made out. About half a mile further on, I again found cup marks on a somewhat smaller group of boulders, among the rice fields.

21. The villagers' view of the matter was, as usual, that the marks were those of the giants, and that the little shrine at the top of the hill was the burial-place of a holy man, the same as the Chandeshwar account. The Kistvaen was evidently modern. But this fact would not affect the view that the original tumulus was of old date. It may often be noticed how later comers adopt the sites chosen by their predecessors for places of worship or sepulture. Of this Dwárá-Háṭh is an example, whilst perhaps one of the most striking instances may be seen in the Chandá District at Narkandá, not far from the confluence of the Waingangá and the Godávarí. Here a ridge of rocks running across the stream forms a natural anicut, ensuring a fine and constant reach of deep water during even the hottest and driest months. On the left bank of the stream are groups of temples of some half a dozen distinct types, from the Cyclopean class, massive blocks of stone without ornament, and evidently of a very early date, up to the recent florid additions of the Rájás of Nágpúr. And a case came under my own notice some years back, in which a faḳír was buried in the middle of one of the largest of the stone circles of the Higna group, near the city of Nágpúr, a tumulus certainly several hundreds of years old. The first comers chose good sites and built and buried there. Later on, the remains of temples or tombs suggested the eligibility of those sites, and the later comers borrowed not only the idea of the position, but building materials also from the ruins.

22. In the above remarks I have tried to confine myself to what I saw and heard on the spot, and have as far as possible avoided mixing up therewith speculations on the origin and significance of the remains. I am generally content to do this, and to leave the analysis of what I may collect and what may appear of interest, to those who, from the appliances and information at their disposal, are able to subject such enquiries to reliable tests, and to extract from my rough jottings any grains of the true ore which may be therein contained. And on the present occasion, having only one or two books of reference with me, (my baggage being necessarily restricted during a march among the Himálayas to what can be carried on the backs of a limited number of men) it may be especially undesirable to advance what may appear to be very crude theories regarding the significance of these markings. I am nevertheless tempted to add to my notes a few remarks and suggestions, more in the hope of evoking some discussion from those who are better informed than myself, and who, with the library of the Asiatic Society ready at hand, can supply omissions or correct any misapprehensions into which I have fallen, than with any intention of appearing to attempt to dogmatise on a subject on which I cannot, of course, claim to write with any sort of authority.

23. In the first place I would desire to notice, with reference to the

markings described in paras. 3 to 10 of these notes, (for this paper has been divided into paragraphs, in order to facilitate reference to the several points mentioned) that since I had the pleasure to bring to the notice of the Society the existence of markings on the stone circles of Central India similar to the Archaic sculpturings on similar circles in Europe, the subject has been advanced a stage by the discovery, not only of the single type of "cup marks", but of two or three other distinct types nearly exactly resembling those treated of, and figured by, the late Sir J. Simpson in his work already alluded to.

24. In addition to the "cup marks" of which so many examples are to be found at Chandeshwar and in the Sameshwar valley, we have now the second type, *i. e.*, the cup mark enclosed in a circle—also the types given at Figs. 14 and 15 of Plate II, and in other plates, of Sir J. Simpson's work. A comparison of the accompanying sketches, which, although rough, are sufficiently accurate, with the plates in Sir J. Simpson's volume, will, I believe, leave little doubt of an extraordinary resemblance between the markings found on similar classes of remains in Northumberland, and in many parts of Scotland, Ireland, Brittany, Norway, Denmark, &c.

Extracts from Sir J. Simpson's descriptions of these markings and tracings of some of the plates accompany this paper, in case the work should not be immediately available.

25. Sir J. Simpson holds that these markings in Europe are not of natural formation, and an examination of these series of lines and holes in Kamáoṇ will lead to the same conclusion, and leave little doubt that the same view holds good in India also. The distinct rows in which the cups are arranged, the shapes other than that of "holes" assumed, indicate design and suggest that the sculpturings are artificial, not natural. Sir J. Simpson meets the view that those in Europe are of recent formation and have been made perhaps by the shepherd boys on which to play a sort of game of draughts, by shewing that the cup marks are more often on the sides of boulders, or on the face of rocks, where no such game could be played; and the same remark holds good for the Central Indian and Kamáoṇ cup marks. And, after all, even admitting that this view correctly accounts for the cup marks, it would not dispose of the origin of the other rough sculpturings.

26 Moreover the people of the neighbourhood have no tradition of the origin of the remains of the markings on them save that they are the work of the giants, or the goálás, which in their minds means the far past. No one there has any knowledge of the markings being of recent construction.

27. And here attention may be called to the circumstance that the idea of such remains being the work of the "goálás", or herdmen, is identical in Kamáoṇ and in Central India also, many hundreds of miles south. In Central India tradition points to the existence of a Goálá dynasty, a

race of nomads, "Shepherd Kings", who held the country before the advent of Aryan civilisation, and here among the Himálayas, the same idea seems to prevail, and to the same people is attributed the construction of similar Cyclopean works. All this would seem to indicate that the markings are not of modern origin.

28. Then as to the significance, if any, of these markings. First as to the cup marks. They are generally arranged in rows, large and small. Sometimes a row is composed entirely of large and small marks. Often the large and small holes are found in juxta-position. The combinations and permutations are numerous. This would seem to suggest that the markings have some significance, and are not so arranged for ornament only. In a brief paper written for the late Earl of Mayo, shortly before his death, on the cup markings found in Central India, and which I believe it was Lord Mayo's intention to communicate to the Royal Irish Academy, by which Society the subject of cup markings on similar remains in Ireland had been discussed, it was suggested by me that these markings might possibly represent a primitive form of writing. The Agham writing consists of combinations of long and short strokes cut on sandstone. On sandstone it would be easier to cut lines with the grain, so to speak, of the stone. To attempt to make a cup mark would be to risk splitting the slab. On the other hand to cut a line on hard trap would be difficult, whereas to work an iron instrument round and round so as to make a "cup mark", would be comparatively easy. It was also pointed out that in the American invention by which a record of the message sent by the Electric Telegraph is made by the instrument itself, the most primitive style of marking, or writing on the paper was necessarily adopted. And the letters in the Morse Code are consequently composed of numerous combinations of long and short strokes. In Army signalling, which I saw recently carried on here from the hill tops by men of the 19th (Princess of Wales's Own) Regiment stationed at Ránikhet, the same simple system is adopted to represent letters by long and short wavings of a flag. By night a lamp is used, long and short flashes taking the place of the long and short wavings of the flag. It is then perhaps not impossible that the many permutations of large and small cup markings may have some such sort of significance having been adopted as a primitive syle of record many hundreds of years back by a people who had not advanced very far in civilisation. I have not had time during my recent march in Kamáoṇ to collect many specimens of such permutations, and have been obliged to content myself with the knowledge of the existence of such markings in many parts of the province, leaving any further investigation for some future pleasant holiday. But the permutations at Chandeshwar, as the annexed sketch will shew, are numerous enough for the sake of the argument, if

indeed it has any force at all. And the accompanying rough sketch VIII, (Pl. IV) of some of the Central Indian markings, shewing many permutations, will assist still further to explain my views, such as they are on the subject.

29. Next as to the possible further significance of some of the markings. If the remarks in para. 12 *et seq.* and the rough sketches annexed have in any way helped to explain my views, then it will be seen that a resemblance exists between the Chandeshwar rock and European markings, and the shrines in the temple at the mouth of the Chandeshwar gorge. That many of the shrines are of recent construction is evident. It will hardly be contested that the last of types 2, 4, and 5 of Plate I, of Sir J. Simpson's book, bear a striking resemblance to the *Maháleo* and *yoni* marks on the Chandeshwar shrines. The centre mark would appear to do duty for the *lings*, the circle for the *yoni*—and the "gutter" is the depression to be found on most stone *yonis*, by means of which the votive libations are drained off from the symbols. And here it may be noticed that in Mahádeo worship, the offering of flowers, and the pouring of a libation, generally of Ganges water, over the symbols is, so far as I have seen, very general. Those who have visited Benares will remember the little spoons resembling somewhat our Apostle's spoons, some of them beautifully chased, with a figure or cobra at the upper end of the handle, used by pilgrims and worshippers at that city in sprinkling the holy water over the Mahádeos there. In Kamáoṇ little niches are to be noticed in Mahádeo temples with stone receptacles for holy water, not unlike what are seen in churches abroad. And the temple at Baijnáth boasts of a large, well-carved figure, holding a bowl, which the priest informed me held Ganges water, and from which pilgrims sprinkle the Mahádeo placed close by.

30. Then again in connection with the monolith Mahádeos found at Chandeshwar, Panḍukoli, and Lodh, mentioned in para. 13 *et seq.*, it may be worth noticing that circles, and what I will call the "conventional symbols" of the *Mahádeo* are *yoni*, and found on exactly similar monoliths in Europe; take for instance Figs. 2 and 3 of Plate xvii of Sir J. Simpson's work.

31. In India these monoliths are found in the centre and in proximity to shrines bearing these markings. Sometimes a circle is found cut on them, and again the shape of the place of worship at Panḍukoli with its double circle of stones, in the centre of the inner of which are the Mahádeos, is as nearly as possible exactly that of these conventional markings.

32. If I am not mistaken, this too is the shape of Stonehenge, and other remains in Europe in the vicinity of which monoliths similar to Indian Mahádeos and bearing incisions similar to the "conventional

symbols" are found. It seems then hardly improbable that the ruins in Europe are the remains of that primitive form of worship which is known to have extended at one time over a great portion of the globe, and which still exists all over India, and that these markings are the rude records of a nomadic race which at an early epoch of the world's history left the Central Asian nursery, and travelling in different directions have left their traces, in Europe as in India, of tumuli and rock sculpturings, generally to be found in hill countries, and inaccessible spots, whither at a later period they were forced to retreat before the advance of a more civilised and a more powerful race. The one being what are generally known by the somewhat vague term of Scythians or shepherd kings, the other the Aryans, descended from the same parent stock, and who later were forced by the necessities of increasing numbers to emigrate from the common Central Asian home, and to explore and conquer the rich countries far to the West and South. Baron Bonstetten's Map of the localities in which archaic remains are found (Plate XXXIII of Sir J. Simpson's work) supports this view. Kistvaens, barrows, cup marks, rock sculpturings, all more or less of the same type, abound in all the corners of the European Continent, indicating that the people who constructed them, were driven thither by a wave of invasion surging from some central point. And so also in India, these remains are found, not in the plains and open country, but in the forests, among the fastnesses of the hills, in the gorges of the Himálayas and Nílgiris, on the Highlands of Central India in that Cul-de-sac of the Nágpúr country, which was long protected by its natural rampart of the Sátpuras with their "abattis" of dense forest, from the effects of Northern Invasion.

33. I am aware that the view of these markings having reference to *lingam* worship is not now advanced for the first time. The subject is alluded to at page 93 of Sir J. Simpson's work but only to be summarily dismissed with the following brief remark:

"Two archæological friends of mine, dignitaries in the Episcopal "Church, have separately formed the idea that the lapidary cups and circles "are emblems of old female Lingam worship, a supposition which appears "to me to be totally without any anatomical or other foundation, and one "altogether opposed by all we know of the specific class of symbols used in "that worship, either in ancient or modern times."

I am sanguine, however, that if the late Sir J. Simpson had seen the sketches of what I have called the "conventional symbols" on the shrines at Chandeshwar, and had been able to compare them with some of the types figured in his work, he might have been inclined to modify the opinion above extracted. The treatment of these symbols is purely conventional, they bear no anatomical resemblance to anything, they are unlike many of

the large, well known and acknowledged representations of the *Mahádeo* and *yoni*. Still they nevertheless represent the same idea. And here it may be noticed that the same argument of anatomical non-resemblance might be advanced in regard to the well known representations, common throughout India, of the meaning of which to the initiated there is no doubt at all. To the uninitiated, however, the shapes convey nothing, and I have known cases of Europeans who have been many years in the country who were quite unsuspicious of what "that jew's-harp idol", as they called it, was intended to represent. As the old priest at Chandeshwar said, "Those who can afford it, put up a big *Máhadeo;* those who can't, put up these slabs." And so also with us. The rich relations or friends of the Christian may put up over his grave a solid richly-carved stone cross. The grave of a poor man, if marked at all, has over it perhaps two pieces of wood nailed together in the shape of a cross, or a cross roughly cut on a piece of stone. The Christian Church is built in the form of a cross. In Panḍukoli and many other spots, the Mahádeo temples are built in the shape of the conventional symbols of that faith. And inasmuch as the symbols of the *Máhadeo* and *yoni* can be more conveniently indicated on stone or on paper by what may be called a ground plan than by a section, the form shewn in pl. III, Fig. A, Sketch V, was apparently first adopted, and this degenerated into the rough conventional treatment of the cup mark and circle so common on monoliths in many parts of Europe.

33. In the view that these markings are nothing but a conventional rendering of the *Mahádeo* and *yoni*, I am further confirmed by what has recently been brought to my remembrance of the manner in which an Amín, or native Surveyor, will indicate a Mahádeo temple on his plotting. I remember that the sign used to mark the position of such temples by the Amíns in the Field Survey of the Chandá Revenue Settlement, in which district I was Settlement Officer some few years ago, and where this from of worship is very common, almost exactly resembled the sketch in Figs. B and C, plate III, sketch V. It is not unlike the form of the Vestal Lamp. Indeed on the summit of a hill near Ránikhet, on the top of a pile of stones which did duty for a Mahádeo shrine, I found a small slab, bearing an almost exact resemblance to the well known form of the classic lamp. In the hole into which oil is poured, a small upright *Mahádeo* is placed.

34. Perhaps enough has now been said regarding the possible significance of these markings to ensure some discussion and to elicit an expression of opinion from those who are better qualified than I can claim to be to speak with authority on the subject. I at least hope that some of the Members of the Society may be able to put me right where my information is incorrect or imperfect. Hereafter, with the help of some references and

notes which I have in my library in the plains, I shall hope to be able to endeavour to trace these barrows and rocks, together with their markings, from Madras, through Central India, and the Himálayas, and thus on through Central Asia to the Crimea and South Eastern Europe. From thence there will be but little difficulty in completing the chain, through the Continent of Europe, to our own Islands. And if this is done, then there would seem to exist a sufficiently distinct tracing of the routes adopted by the tribe, one section of which went West, the other South, in their search for fresh climes and pastures new, at a period of which there is but faint historical record, save on the rough stones and temples with their markings of a type which are common to both Europe and India.

35. Before concluding these rough, and necessarily imperfect, notes, I must add two extracts, which I have found since I began to write, amongst my limited baggage and both of which seem to bear directly on the subjects above noticed.

At para. 17, the local tradition which attributes the construction of the circles on the summit of the Paṇḍukoli hill to the Páṇḍús has been noticed. Here is an exactly similar tradition regarding an almost exactly similar class of remains near Salem in the Madras Presidency, many hundreds of miles to the south of the Himálayas.

" In a paper on Tumuli in the Salem District the Rev. Maurice Phil-" lips, of the London Missionary Society, arrives at the conclusion that the " tumuli were the burial-places of the non-Aryan aboriginal inhabitants of " the South, who are now represented by the Dravidians, and who, like the " pre-Aryan inhabitants of the North, are proved by their language to have " belonged to the same branch of the human family as the Turanians; that " their ancient customs and religion disappeared before the combined influence " of Brahmanism, Buddhism, and Jainism, precisely in the same way as the " ancient customs of the Teutons, Celts, Latins, and Slavs disappeared in " Europe before the influence of Christianity, or the ancient customs of the " Scythians of Central Asia disappeared before the influence of Muhamma-" danism. If this theory be correct, no tumuli in the plains of India are later " than the thirteenth century A. D., and on the Neilgherry Hills probably " none are later than the fifteenth or sixteenth century A. D. The natives " know nothing about the tumuli, and according to Dr. Caldwell there is no " tradition respecting them either in Sanskrit literature or in that of the " Dravidian languages. The Tamil people call them Pandu-Kuris, Kuri " means a pit or grave, and Pandu denotes anything connected with the " Páṇḍús, or Páṇḍava brothers, to whom all over India ancient mysterious " structures are generally attributed. To call anything a work of the Pán-" ḍús is equivalent to terming it 'Cyclopean' in Greece, a work of 'Picts' in 'Scotland, or 'a work of Nimrod' in Asiatic Turkey."

36. And the following extract from an article in the *Madras Times* of the 7th February, 1876, bears equally on the subject.

"The village of Jala is about fourteen miles from Bangalor, situated at the base of a large isolated rocky hill; upon the summit of which is a little grassy dell, stretching out in front of a cave, that has been converted into a small picturesque temple. It is but a small village, the temple is curiously built against the side of a low rocky hill, a cave forming the sanctum. It possesses no architectural beauty, and is interesting only from the fact that the priest in charge, a wild looking fanatic, apparently about sixty years of age, has never left its precincts, for more than forty years, nor has he allowed the light in the holy place to go out for that period! The whole neighbourhood is thickly covered with cromlechs; near the village there are at least one hundred plainly to be seen. These cromlechs are surrounded by circles of stones, some of them with concentric circles three and four deep. One very remarkable in appearance has four circles of large stones round it, and is called by the natives "Pandavara Gudi" or the temple of the Pandus, who are popularly supposed to have been the descendants of the Pandavas, the five sons of the Raja Pandu.......The smaller cromlechs are designated "Pandasiara Mane" or the houses of the Pandus. This is supposed to be the first instance, where the natives popularly imagine a structure of this kind to have been the temple of a by-gone if not of a mythical race. ....Many of these curious structures have a triple circle, some a double, and a few single circles of stones round them, but in diameter they are nearly equal, the outer circle varying from thirty-seven to forty feet."

37. I extract also from page 185, 5th Series VI, September 2nd, 1876, of "*Notes and Queries*", a note shewing that the custom of hanging shreds of rags on trees as votive offerings, still exists in Ireland, that country of stone circles. The sacred tree at the Pandukoli temple or stone circle was, as noticed at paragraph 14, similarly decked at the time of our visit, and the custom is, as is well known, common throughout India.

"*Anatolian Folk-lore.*—The custom of hanging shreds of rags on trees as votive offerings still obtains in Ireland. I remember as a child to have been surreptitiously taken by an Irish nurse to St. John's Well, Aghada, County Cork, on the vigil of the Saint's day, to be cured of whooping cough by drinking three times of the water of the holy well. I shall never forget the strange spectacle of men and women "paying rounds", creeping on their knees in voluntary devotion or in obedience to enjoined penance so many times round the well, which was protected by a grey stone hood, and had a few white-thorn trees growing near it, on the spines of which fluttered innumerable shreds of frieze and vary-coloured rags, the votive offerings of devotees and patients."

From Jour

Pl. VI

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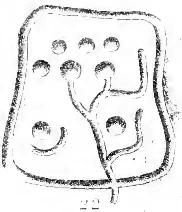


22

EUROPE.

The proceedings at the Panḍukoli Fair might be described in almost similar words.

P. S. Since the above paper was written, I had the pleasure of meeting, at the Imperial Assemblage at Delhi, Mr. Campbell of Islay, now on a visit to this country, who has taken much interest in the subject of the Scotch Rock markings. To him I shewed copies of the rough sketches, and explained briefly the views noticed in this paper. Mr. Campbell has since visited Ayodhyá, and has been good enough to send me a note on his enquiries there, from which the following is an extract:

"January 8th, 1877. Benares.

"Having seen sketches and notes on rock Sculptures in India which closely resemble unexplained rock carvings in Scotland; and having myself found one of the Scotch forms cut on a boulder in Kángṛá, I was set on the right scent by Mr. Rivett-Carnac at Delhi. Being at Ayodhyá with a Hindu who speaks good English, I got a faḳír and drew on the sand of the Gogra the figure I asked what that meant. The faḳír at once answered, "Mahádeo". I then drew and got the same answer. At Delhi, my old acquaintance Mr. Shaw told me that these two signs are chalked on stones in Kángṛá by people marching in marriage processions. The meaning given to these two symbols now in India is familiarly known to the people. Many other Scotch signs may probably find an explanation here. One in particular I take to be the Trisul. I brought a number of Scotch signs with me. I have got a number of marks from natives who still use them."

Mr. Whitley Stokes, too, knowing the interest taken by me in the subject, has been good enough to send me a copy of the Journal of the Royal Historical and Archæological Association of Ireland for July, 1875, containing Mr. W. F. Wakeman's paper on rock markings in the County of Fermanagh.

The sketches and description of these Irish rock markings correspond almost exactly with the Kamáoṇ markings noticed in this paper.

FLINT IMPLEMENTS FROM CENTRAL INDIA.

Notes by Mr. H. Rivett-Carnac, Honorary Secretary to the Society, on the "Swiney Collection" of Flint Implements and Arrow-heads. Read at the Meeting of the Antiquarian Society of the Central Provinces of India held on the 1*st January* 1866.

The specimens of Flint Implements now exhibited form part of a collection made by the late Lieutenant Downing Swiney, of the Royal Engineers, when stationed at Jubbulpore in June 1864. In August of that year, Mr. Swiney brought the collection with him to Nagpore, with the intention of exhibiting it at the Society's Meeting, and he was engaged in classifying the specimens, and in preparing a paper descriptive of them, when he was seized with the illness which ended in his death. Subsequently, by some unfortunate mistake, the collection was broken up into lots and sold, and some difficulty has consequently been experienced in tracing and recovering them. The specimens now exhibited, 182 pieces in number, comprise very nearly the whole collection made by Mr. Swiney. Recently they passed into possession of Lieut.-Colonel Wells of the "Royal" Regiment, who has very courteously placed them at my disposal, and by whose permission they are now exhibited.

Although Mr. Swiney's papers were carefully searched in the hope of finding a catalogue of the specimens, or some notes describing the circumstances and locality of their discovery, no Memorandum throwing light on the subject was found. Fortunately I have preserved the following letter written by Mr. Swiney some months before his death. In this he wrote :—

"I think you will be likely to take an interest in a subject which has occupied my attention since my arrival at this station. It is the discovery of flint implements in the granitic gravel and red soil of the Jubbulpore District. In my rambles amongst the neighbouring hills, sketch-book in hand, I was fortunate enough to hit upon several fragments, which struck me as remarkably similar to some I once saw in the British Museum.

"I went therefore systematically to work, employing coolies to dig, under the superintendence of myself and some peons.

"The result has been very satisfactory.

"By the last Mail from Bombay, I forwarded to England to Sir Charles Lyell, two cases of 5 trays each of most perfect specimens, and since their despatch, I have forwarded a long paper on the subject, pointing out many interesting peculiarities in these Indian specimens, and describing the manner and geological position of their finding.

"The hammers and knives of triangular section, are of precisely the same kind as those mentioned by Lyell in his "Antiquity of Man"—but the polygonal specimens have never, I think, been noticed before. They are most perfect, and beautifully polished, especially those in chalcedony. The jasper ones are very varied in colour, and present extremely pretty combinations when laid out on the specimen trays. I must mention one stone which I consider a great find. In my paper on the subject, I stated that it was difficult to conceive how these implements had been manufactured, as the polygonal arrow-heads have their facets curved, as if scooped out with a gouge. I thought it probable that the rough stones had been placed on their bases, and that the arrow-heads had been gradually punched out of them, by a gouge working downward from the point. In support of this view I instanced a number of the specimens which bore visible marks of a circnlar punch, which seemed to cut the flint as clean as a cheese-scoop does cheese. They are exactly circular with sloping sides and vary in size from that of a three-penny bit, to that of a pin's head. No one who examines them can have doubts of their being man's handiwork. But what could they have been done with? If with an *iron* instrument, why make *stone* implements, where iron was available? Again if of iron, how did they manage it? and have we any instrument at the present date, which will punch holes in flint without cracking it? Still farther, in some of the impressions the sides of the cut are torn, and have a fibrous appearance, as might be made by a rather blunt gouge in dryish clay. Was the flint in a different state when these arrows were made, and hardened afterwards? Well, a few days ago, I came across a specimen most delicately marked in two places. The mark is more than 1-4th of an inch long and under a magnifying glass is most clear.

"One of them has a number of semi-circular bands, conical in section, punched into the stone by some gouge-like instrument. Another one is most curious, two most perfect cones having been left in the centre of two intersecting circles punched into the flint. One cone has been chipped on one side. This was done by a circular punch or by two operations with the semi-circular one for each cone The age of these implements is I think proved by, 1st, their presence in the granitic and sandstone formations, and 2ndly, by the fracture of a number of the white bleached ones, which, in section, show a core of the original coloured flint, with its bleached outer surface. Many of these bleached thicknesses are fully 1-8th of an inch.

"I have made enquiries amongst the Natives and Gonds, and can get not even a tradition on the subject of these curiosities. They all pronounce them to be natural.

" The subject is one of considerable importance, at the present stage of scientific enquiry, and connected with the discoveries of the flint implements, found in the Engis and Neanderthal caves, the valley of the Somme and in England, the two cases of specimens, (the first ever sent from India!) which I have sent home, will attract considerable attention and interest."

This letter affords a valuable clue. It shews that the Royal Geological Society are in possession of a collection of these specimens, and that Mr. Swiney fortunately left on record a detailed account of his discovery. I have addressed the Secretary of the Royal Geological Society, begging him to furnish me with a copy of this paper, but as yet no reply has been received.

Two flints accompanied Mr. Swiney's letter. They were, as Mr. Swiney particularly explained, very inferior specimens. He hardly liked to entrust the more valuable specimens to the Post. These two specimens which were very different, and very inferior to these contained in Colonel Wells' collection, were forwarded to Mr. Blanford, the Secretary of the Asiatic Society at Calcutta. They were exhibited at a meeting of the Bengal Asiatic Society held in May 1865, on which occasion Mr. Blanford read Mr. Swiney's letter, and explained several points therein referred to. He pointed out that the gouge-like marks noticed by Mr. Swiney, had been caused by the natural fracture of the stone ; flints and agates, when struck in a particular direction, giving similar facets more or less regular according to the homogeneity of the stone. The marks, which Mr. Swiney had considered to be the evidence of a cutting instrument, were, Mr. Blanford thought, natural marks, such as occur not unfrequently in agates weathered, but not water worn. With regard to the two specimen flints, Mr. Blanford was of opinion that they were not arrow-heads ; they might, he thought, be "cores" from which splinters had been chipped off to serve as arrow-heads, or cutting flakes. The specimens were, however, so inferior, that he was unable to express any decided opinion as to their artificial character ; at the same time he remarked that if the sketches that accompanied the letter, at all correctly represented the specimens of Mr. Swiney's collection, some of the flints must undoubtedly be artificial.

I am sorry to say that the "punch-marked" stone, to which Mr. Swiney particularly refers, has not been found, nor can I trace the stone hammers. Still, however, the greater part of the specimens sketched by Mr. Swiney are contained in this collection, and from them it will be seen how correct Mr. Swiney's sketches were. I hope soon to be able to send these flints to Mr. Blanford for inspection, and as they are very different indeed from those which he has already seen, I am sanguine that they will receive a more favourable verdict at his hands, than that obtained by the specimens sent to him in May last.

As regards the value in a scientific point of view, of this collection, I cannot, of course, pretend to be able to give you any information. Fortunately, Mr. W. Blanford is present at this meeting. He has carefully inspected the specimens, and he will be able to give you an authoritative opinion regarding their value, and from what he has already mentioned to me privately, I think he will tell you that the discovery made by Mr. Swiney is one of real scientific interest. I may however, briefly mention the reasons why the position of being manufactured flint implements is claimed for these specimens, which, to the general observer, would doubtless appear to be not much more than rather clumsy and ordinary looking pieces of stone. The circumstance that first suggested their value to Mr. Swiney was, as he mentions in his letter, their resemblance to certain flint implements in the British Museum. Of late years, the discovery of flint implements, as bearing upon the question of the antiquity of man, has excited great interest at Home. Large quantities of "Celts" or fragments of stone, bearing a close resemblance to these, the first specimens ever found in India, have been found all over Europe. The opinion of eminent geologists, such as Sir. C. Lyell and Mr. Lubbock, regarding these Celts is, that they are implements or weapons used by the inhabitants of the localities in which they were discovered, in a remote age, when the use of metals was unknown. The discovery of these implements buried in strata, which have a fixed geological age, has resulted in inferences being drawn regarding the date of their manufacture. Of the four classes into which I have divided the specimens of the Swiney Collection, those of Class I, closely resemble the flakes described by Sir C. Lyell and Mr. Lubbock, and which will be found figured in their books. This collection also contains a number of "cores," from which these flakes have been struck off, but these are of comparatively small interest. They form Class IV. We may fairly claim for those of the 1st Class, the position which the opinion of eminent geologists has secured for similar specimens discovered in Europe. Class II. consisting of polygonal cones in great variety, of all sorts and sizes, are, as Mr. Swiney pointed out, of quite a different type from any as yet discovered in Europe. The IIIrd Class is but a sub-division of Class II. For these also, I would claim the position of being flint implements, manufactured by a people of the stone age.

But to all who are asked to accept these specimens as flint implements, the two following questions will naturally present themselves. (I)—What proof is there that these flints were shaped by man? And (II)—For what purpose were such clumsy articles used? The probable age of these stones, supposing them to be of human manufacture, would also be discussed, but it may be as well to mention here, that I do not think that in the absence of details of the exact circumstances and locality of their discovery, it would

be possible for even a geologist to give an opinion regarding the approximate date of their manufacture. Still, the history of the country in which these implements were found, has been known for many hundreds of years, and so far as our history goes, the inhabitants of the country around Jubbulpore are known to have manufactured their weapons and implements from the metals which abound in the neighbourhood. Any people then that were dependent on stone implements must indeed have belonged to an age long gone by, and we may therefore fairly claim considerable antiquity for the specimens in this collection.

As regards the first question, "What proof is there that these flints are the work of man's hands," one of the strongest points in favour of the supposition of their artificial origin, is the close resemblance that all the specimens of a Class bear to one another. The specimens of Class I. which exactly resemble the flakes found in Europe are 36 in number. Of Class II. there are 34, and although of different sizes, they are as nearly as possible of one shape, being all sugar-loaf-shaped cones with fluted sides. At the side or base of each is the distinct mark of a notch to be referred to more in detail hereafter. Class III., as will be hereafter explained, are of the same type as Class II., being implements in a less forward state. Between the splinters of Class I. and the cones of Class II., there is a close connection. These splinters account for the groove; they are evidently the fragments, the separation of which from the block has caused the groove. They belong to, and fit into the groove like marks, and it is to the stripping off of a regular succession of these splinters, that the block owes its conical shape.

How this is done is thus described by Mr. Lubbock.*

"Savages value it (flint) on account of its hardness and mode of fracture, which is such that with practice a good sound block can be chipped into almost any form that may be required. If we take a rounded hammer and strike with it on a flat surface of flint, a conoidal fracture is produced; the size of which depends in a great measure on the form of the hammer. The surface of fracture is propagated downwards through the flint, in a diverging direction, and thus embraces a cone whose apex is at the point struck by the hammer, and which can afterwards be chipped out of the mass. Flint cones, formed in this way, may sometimes be found in heaps of stones broken up to mend the roads, and have doubtless often been mistaken for casts of fossil shells."

Mr. Lubbock then gives sketches of a core and flakes, which closely resemble the specimens now exhibited, and goes on to say—

"Easy as it may seem to make such flakes as these, a little practice will convince any one who attempts to do so that a certain knack is required,

* "Pre-historic Times", p. 64.

and that it is also necessary to be careful in the selection of the flint. It is therefore evident that these flint flakes, simple as they may appear, are always the work of man. To make one, the flint must be held firmly, and then a considerable force must be applied either by pressure or by blows repeated three or four times, but at least three ; and given in certain slightly different directions with a certain definite force ; conditions which could scarcely occur in nature ; so that, simple as it may seem to the untrained eye, a flint flake is to the antiquary as sure a trace of man, as the foot-print in the sand was to Robinson Crusoe."

That the above explanation of the mode of manufacture of these stones is not a mere theory will be seen on reference to Sir C. Lyell's "Antiquity of Man," in which it is mentioned that Mr. Evans has proved by actual experiment the possibility of fashioning stones into these shapes with the aid of a rough stone hammer. In favour then of the artificial origin of these cones we have the circumstance of the close resemblance they bear to one another in shape and design, and secondly the fact that such shapes can be produced artificially. No natural force is I believe as yet known of by which such forms could be produced, and for those who are still inclined to question the human origin of these specimens, I think it will be for them to show the existence of a natural force which could produce such results.

The second question "What purpose could these flint implements have served?" is as regards Class I. answered by the authorities already quoted. The sharp flakes were most probably used as knives or arrow-heads or awls, and effective enough some of the splinters in this collection if fitted into a bamboo would prove. But it is Class II., the polygonal conical flints, to which I think the greatest interest attaches, inasmuch as they are of a type of flint implements quite distinct from any that have hitherto been discovered or described. Mr. Swiney was, I know, of opinion that they were spear-heads and arrow-heads according to their size, for one is but a large edition of the other. After examining them carefully I have attempted, in order to account for some of the peculiarities they exhibit, to work out a theory regarding the mode and object of their manufacture. This theory, such as it is, I now submit with great diffidence to the meeting.

As to the use of these flints, without specifying that they were actually arrow-heads or spear heads, I would claim for them that they were intended for pointed weapons or implements of some sort or other, used perhaps for killing animals or men, or perhaps for splitting wood, or for some other domestic purpose, by a people of an age long gone by.

I have purposely said *intended for* pointed weapons or implements, because in my opinion, the present collection does not contain a single finished, or perfected implement. Mr. Swiney found all these flints in or close

to one place, on the hill side near Jubbulpore, in a locality which abounds in the stone of this description. My theory would then be that Mr. Swiney came upon the site of a former manufactory of these implements, chosen because the material from which they were fashioned was close at hand and abundant. The first discovery which brought the existence of flint implements to notice in England was made under very similar circumstances in the year 1800 by Mr. John Frere at Hoxne in Suffolk.

Sir C. Lyell thus describes the discovery—*

"So early as the first year of the present century a remarkable paper was communicated to the Society of Antiquaries by Mr. John Frere, in which he gave a clear description of the discovery at Hoxne, near Diss, in Suffolk, of flint tools of the type since found at Amiens, adding at the same time good geological reasons for presuming that their antiquity was very great, or, as he expressed it, beyond that of the present world, meaning the actual state of the physical geography of that region, "The flints" he said "were evidently weapons of war fabricated and used by a people who had not the use of metals. They lay in great numbers at the depth of about 12 feet in a stratified soil which was dug into for the purpose of raising clay for bricks. Under a foot and a half of vegetable earth was clay seven and a half feet thick, and beneath this one foot of sand with shells, and under this two feet of gravel, in which the shaped flints were found generally at the rate of five or six in a square yard. In the sandy beds with shells were found the jaw bone and teeth of an enormous unknown animal. The manner in which the flint weapons lay would lead to the persuasion that it was *a place of their manufacture.*"†

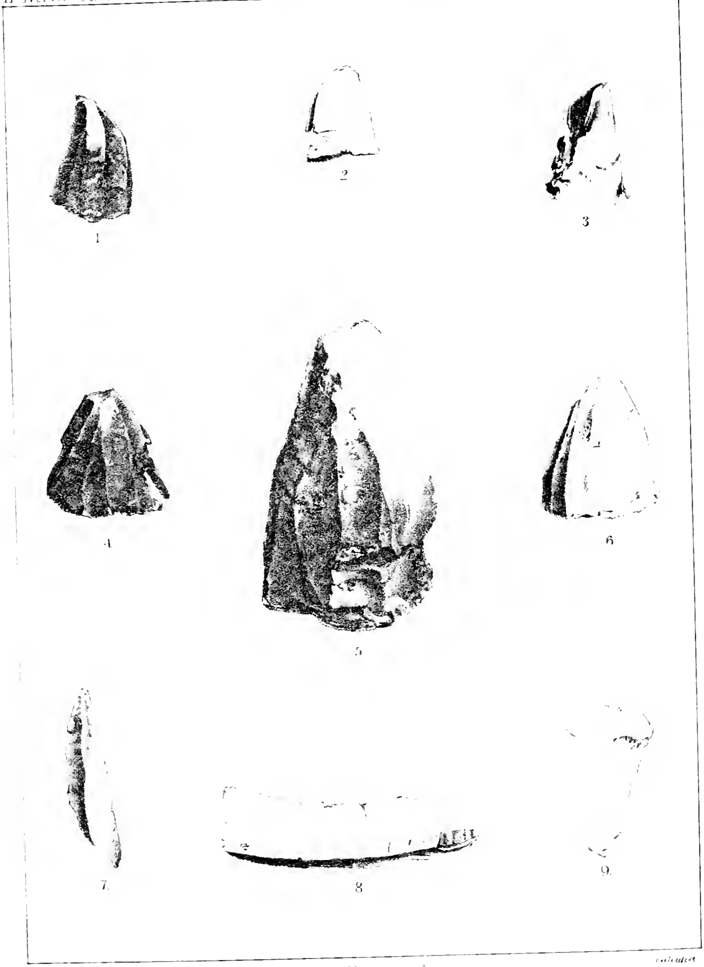
Sir C. Lyell then goes on to say, "Specimens of the flint spear-heads sent to London by Mr. Frere are still preserved in the British Museum, and others are in the collection of the Society of Antiquaries," and it was doubtless these very implements which Mr. Swiney saw in the British Museum, and which first suggested to him the character and importance of these, at the first glance, ordinary looking fragments of stone. When the Abbeville discoveries attracted so much attention, the specimens found by Mr. Frere and his paper descriptive of them, which had remained almost unnoticed for many years, received much attention, and I would refer all who take an interest in the subject to the accounts given of the discovery in Sir C. Lyell's "Antiquity of Man" and in Mr. Lubbock's "Pre-historic Times." It is enough here to say that Mr. Frere's supposition that he came upon the site of a manufactory of these implements is generally accepted as correct.

* Lyell's "Antiquity of Man", p. 166.

† Italics are mine. H. R. C.

FLINT IMPLEMENTS
CENTRAL INDIA

H. Rivett-Carnac *Pl. III.*



S. Sange[illegible] lith. *From Photographs* *Calcutta*

If it be admitted that Mr. Swiney's discovery was made under somewhat similar circumstances, and that these flints were discovered on the long deserted site of a manufactory of flint implements, what may we suppose these specimens to be? Flint arrow-heads, or finished implements used by the people of those days? I think not. In the days when these implements were in vogue, there was doubtless plenty of use for them, and a weapon or implement once finished, would have been sent out into the world for business without any delay. The perfected weapons would not have been deserted, and left *en masse* on the site of the manufactory. Arrow-heads or spear-heads if found at all would be found scattered about on the field of battle, or where the hunter had fired them away or dropt or lost them. But on the site of a deserted manufactory we might expect to find the debris of the workshop, the broken knobs and splinters of flint, the imperfect and unsuccessful attempts to fashion by a clumsy process an implement out of stone. And this is just what I believe the present specimens to be. Not one of them represented according to my idea the stone implements of those days; they are all I think fragments of those implements destroyed in the course of manufacture.

Although this collection does not contain a single perfect specimen, still the fragments of what was intended to be a perfect weapon, and which split and went to pieces at different stages of the process of manufacture, are so numerous that it is not difficult to put them together and to realize from them what the shape of the finished article must have been. These fragments, though some are more perfect than the others, all tend to one shape, and are I think, but broken sections of cones all commenced on one general design. The most perfect of these specimens are those represented in No. 6 of Plate III. and No. 6 of Plate V. From these it is apparent that the implement the manufacture of which was aimed at, had a point. No. 6 of Plate III. has fourteen regular and carefully worked sides ending in a perfect point. No. 6 of Plate V. has eleven sides all produced by careful hammering and flaking off of splinters, as described in the extract from Mr. Lubbock's book already quoted. But a spear or arrow-head to be of real use required something more than a point. Fitted in as it generally is to a bamboo stick or shaft of some sort, a shoulder or notch must be made in the stone to keep it in its place. Every specimen contains a distinct mark of such a notch, or of an attempt to make one. It was in making this notch, which was indispensable for the efficiency of the weapon, that the difficulty lay, and it was in this process I am inclined to think, that the accident happened that destroyed the implements, causing them to be thrown away as useless, and thus resulting in their discovery, and in their exhibition here to-day. For as already explained the pointing process was not very difficult. The natural fracture of the stone was in a longitudinal direction

and the splinters flaking off easily enough, a point was eventually arrived at. Thus far the work was so to speak *with the grain* of the stone. But to make the notch it must have been necessary to give a side blow, and here was the danger of the stone snapping, and the point breaking off; I am inclined to think that No. 6 of Plate III. and 6 of Plate V. and many similar carefully pointed specimens are implements which have met with this unfortunate accident at nearly the last stage of the process. At their base they bear distinct marks of the attempt to make the notch.

No. 4 on Plate III. is a very interesting specimen. It bears the sign of a notch at the base, and again, as will be seen from the Photograph, it has been notched half way up. The tip too has been knocked off, so that the top is flat. And I would attempt to account for its condition in this way. It would appear to have been originally a carefully worked spear-head that has met with a similar accident to that which overtook figure 6, Plate III. The notch at the base where it snapped off is clear, why then the notch half way up? It would seem that the stone worked so well that the labourer hardly liked to abandon it altogether, and determined to reduce the unsuccessful spear-head to an arrow-head, the one being indeed but a large edition of the other. But a second accident overtook it, the stone spilt down the back, and hence we have it with its two sets of notches and other signs of manufacture. And why the flat surface at the top caused by the point being nipped off? The reason of this is obvious enough; without a flat surface it would have been impossible to flake off the splinters and reduce the unsuccessful spear-head to a notched arrow-head. On a point there would have been no space for the blow of the hammer, and hence the necessity of the flat top as we find it. In this last specimen it will be seen that, when reducing the spear-head, care was taken to make the notch (the difficult process) before commencing the point, and the reason of this is sufficiently clear. In many cases, after all the trouble of working the spear-head to a point had been gone through, the point had snapped off in making the notch, and the whole labour had thus been lost. It would then naturally suggest itself to the workman to undertake first the notching, the most critical and difficult process. If that was successful then the point could be put on easily enough afterwards. I take Nos. 1, 2, 3, 4, 5, of Plate V. to be flint implements to which the "notching," or first process only has been performed, and which, either from the stone not splitting well, or from some other unfavourable circumstance were left unfinished. There is a perfect series of flints of all sizes in this stage.

I have applied the general term "arrow-head" and "spear-head" to these specimens. But I do not wish to take my stand on their being arrow-heads or spear-heads. All I would desire to hold is that these conical flints were wrought by man's hands and intended to be used as implements

FLINT IMPLEMENTS
CENTRAL INDIA

H Rivett-Carnac *Pl. I.*

S. Sedgfield Lith.

From Photographs

Calcutta

for some purpose or other. I do not think that they are only "cores" from which splinters have been struck off. If "cores," why the careful working to a point? why the notch? and again, why should a savage, at the imminent risk of his fingers, persevere in hammering away at cores like the small ones shewn in the Photographs? Regarding the specimens of Class IV., I have not much to say, they all bear the groove like marks of working and may be cores of the same type as those found in Europe.

I have attempted in the above remarks to account in some way for the peculiarities noticeable in these flints. The explanation given regarding them may or may not be correct. I have been induced to submit it to the Society not so much from an impression that it is the solution of the mystery connected with these stones, but in the hope that the points and peculiarities noticed by me may perhaps assist those who are authorities on such subjects, in arriving at a conclusion regarding the merits of Mr. Swiney's collection. I hope too that the subject having now been brought before the Society, further enquiries regarding the history and existence of these stone implements may be made, and that thus a subject in which Mr. Swiney took great interest, and one in which, if he had lived, he would have been able to give very valuable information, may not be lost sight of.

Remarks by MR. W. T. BLANFORD, *on the above Collection, at the meeting of the Society, Nagpore, 1st January,* 1866.

These specimens of chipped agates are, I think, of peculiar interest. They are not only the first specimens of human implements of the stone age which have been found made from the silicious materials so abundant in the trap formation of Central and Western India, but they are also remarkable on account of their form, which is very different from that of stone implements in general, and certainly quite distinct from any thing hitherto discovered in India, with the exception of some specimens from Sind, in the collection of the Bombay Branch of the Royal Asiatic Society, concerning the history of which very little appears to be known. With this exception the only *chipped* stone weapons hitherto met with in this country (in Madras and in Bengal) are of forms similar for the most part to the well-known types of Western Europe;* they are much larger than these specimens and of different material (quartzite). On the whole they are also of more definite forms than those now exhibited.

* A description of the numerous implements found in the neighbourhood of Madras, with a large number of good figures, by Mr. R. B. Foote of the Geological Survey of India will be found in the Journal of the Madras Literary and Scientific Society, 1864-65.

As regards the first question noticed by Mr. Rivett-Carnac; What evidence is there that these fragments of agate and jasper were shaped by men? for myself I have not the slightest doubt upon this point. The large number of surfaces each produced by a distinct fracture, and to all appearances the result of a separate blow, and the close similarity of the resulting forms are ample proof, I think, that they are due to design, and not to accidental fracture. The forms produced by natural forces are peculiarly well seen in the beds of those rivers which traverse the trap country, and recently in looking over the broken and chipped agates in the bed of the Godavery, where they are excessively numerous, composing indeed the greatest part of the gravel, I have been struck by the excessive diversity of forms. It is almost impossible to find two fragments at all closely resembling each other in shape, especially if bounded by more than two or three surfaces of fracture. I am not aware of any natural force by which forms, such as these flints present, are likely to be produced, and I quite agree that the *onus* of proof is on those who deny the human origin of these fragments, to shew that such a natural force exists.

As regards the next question, What could have been the object for which these chipped agates were formed? Mr. Rivett-Carnac has suggested that they are imperfect arrow-heads and spear-heads, or implements of some sort, and has pointed out that in every specimen there is a more or less perfect notch which he conceives was intended to fit the head into a bamboo shaft. The suggestion is most ingenious, and may perhaps be correct, but there are one or two circumstances which make me hesitate to agree with it. In the first place all the weapons intended for piercing, such as arrow-heads and spear or lance-heads, are now made, and so far as can be judged, always have been made with one diameter considerably greater than the other, in other words their transverse section is an oval and not a circle. It is evident that such a form is the best adapted to penetrate deeply, and to make a broad and deadly wound, and that so very obvious a fact has been known from the earliest times is evident from the form of the weapons of the stone age. Indeed none of the Jubbulpore specimens appear well adapted for the heads of such weapons as arrows and spears, even if the sharpest of points were put upon them; the sub-conical form especially being not merely of the wrong section, but being far too obtuse in form, and not nearly sufficiently elongated to form the point of an efficient weapon devised to wound by being thrust or cast.

Amongst the various chipped stones found in Europe, the formation of which is ascribed to human agency, are the peculiar blocks known as "cores" from its being supposed that from off their surface have been chipped the sharp laminæ known as "flakes" and probably intended to be used as knives. They are very much larger I believe than these specimens

of Mr. Rivett-Carnac's, and the chief difficulty in supposing the latter to be "cores," consists in the extreme minuteness of the fragments which must have been chipped from them. Several of these chips, together with the polygonal pieces of agate from which they have apparently been obtained, were exhibited at the Nagpore Exhibition, in a collection belonging I think to Major Ryder, and many of them were less than an inch in length, and not broader than the blade of a small penknife. It is not easy to understand what can have been the use of such very small pieces; the purposes to which a savage generally applies a knife requiring a much larger weapon.

There is, however, another view of the question. It may be thought that these agates were shaped by human beings whose reasoning powers were so undeveloped that they had not yet learned that a weapon with an oval section was better adapted to pierce than one with a round section, who had not even remarked that an arrow-head or spear-head ought to taper much more gradually than these little cones. That so low a degree of intelligence is compatible with our notions of human reasoning powers is no answer. Inability to form a distinct conception of a higher number than four or five is equally incomprehensible to our minds, but yet is found amongst many existing tribes of low organisation. We know that stone weapons had been used for ages before men learned how to smoothe and polish them. There is certainly this to be said that a savage's attention must be constantly directed to the efficiency of his weapons; they are his means of sustaining and preserving life. With numbers he has but little concern. On the other hand the early inhabitants of India may have lived mainly on fruits, and have had little occasion for weapons in order to procure food.

Certainly if these polygonal agates be weapons, they point I think to a lower development of intellect, and consequently to an earlier stage of human existence than has been previously known. And in connection with this, it is extremely desirable that something should be ascertained as to their mode of occurrence, and especially the geological relations of the beds in which they are found. This becomes the more desirable when the geological peculiarities of the Nerbudda valley are taken into consideration, for it should not be forgotten that in the gravels of the Nerbudda, mammalian remains, considered by Falconer as of Pleocene age, occur in great abundance. The Pleocene, although a very late geological formation, is far older than any of the beds in which human remains have been met with in Europe or America. It, however, remains to be seen whether the Nerbudda formations really correspond to the European Pleocene, and also whether the agate implements are derived from the Nerbudda gravels or from later deposits, and the subject is only mentioned to shew the interest which attaches to the enquiry.

NOTE BY MR. RIVETT-CARNAC.

Since the Meeting of the Society in January last, at which the above remarks were made, a letter has been received from Mr. Blanford, in which he says: "I have, since I saw you last, noted one or two additional circumstances bearing upon these agates. I have tried to make imitations of the prismatic type from the same material, a kind of jasper, but with indifferent success. I am disposed to believe that the prisms were formed by blows at the side, and not at the end, and must consequently have been held by some artificial means, but of this I am not quite certain. I am also inclined to think that the imperfect notches are accidental and due to the structure of the stone, at least I constantly made similar notches unintentionally, and I am nearly convinced that these ancient polygonal prisms and pyramids were "cores," and that the small sharp flakes split off from them were the weapons. I have met with one perfect specimen of the prismatic type in the valley of the Pench River, north of Chindwarra, lying on the surface of the ground. I also picked up several fragments of the jaspideous stone on the banks of the smaller Tawa in Nimar, not regularly formed, but from which precisely such small flakes as those contained in the Jubbulpore collections, appear to have been chipped off. These last may have been accidentally formed, but if they be, as I suspect, the work of human agency, they go far to prove that the flakes were the object of the manufacture. It has occurred to me that these flakes may have been intended to tip darts or small arrows, for the purpose of killing birds and small animals, or possibly fish. For such purposes these little agate chips, if fixed on reeds, would be well suited.

"I should also mention the discovery by Mr. Wynne of an agate flake, very probably of human manufacture, in the gravels of the Godavery, which contain the same mammalian fossils as those of the Nerbudda. These Godavery deposits have been singularly neglected, and it is to be hoped that some attention may be directed both to the bones and to the possibility of the occurrence of stone weapons amongst them."

ANCIENT REMAINS IN CENTRAL INDIA.

From the Journal of the Bombay Branch of the Royal Asiatic Society.

Mr. H. Rivett-Carnac said, he had much pleasure in complying with the request of the Honorary President that he should mention briefly the result of the recent examination of the groups of tumuli, supposed to be of Scythian origin, found in Central India. The existence of these curious old burial places had long been known to the Society. Colonel Meadows Taylor had described in detail in the Society's Journal the "barrows" common throughout the Deccan. The Cromlechs and Kistvaens of the Nagpore country had been examined and noticed by the late Rev. Hislop on several occasions. The last number of the Journal of the Central Provinces Antiquarian Society contained an interesting account by the Rev. Dr. Wilson of similar discoveries made in Coimbatore in 1809, and quite recently again Mr. Brereton had followed up Colonel Meadows Taylor's researches in the territory of His Highness the Nizam, and had made some interesting discoveries, the details of which had already been communicated to the Society. The discoveries made at Nagpore were, thus, only in continuation of the good work commenced years ago by a member of the Bombay Branch of the Royal Asiatic Society: but he, Mr. Rivett-Carnac, thought he could promise that the local Society at Nagpore would do their best to follow up these inquiries, and to gather the fullest information regarding the origin and history of these remains. The tombs recently examined formed part of a well-known group situated along the brow of a low range of trap hills in the immediate vicinity of the village of Junapanee, five miles west of Nagpore. This seemed to have been a favourite burial-place, the neighbouring hills being dotted for miles with mounds surrounded by circles of trap boulders, the form assumed by the barrows in that part of India. The tombs were generally massed together in groups of from thirty to forty, and were so much alike that on commencing the examination it was at first determined to trust to chance and to open the barrow nearest at hand. Further examination, however, brought to notice three barrows rather more imposing looking than those of the main group, situated at some little distance from it, in a quiet, pleasant spot near a small stream on the east side of the hill. The centre barrow, which was about sixty feet in diameter, was encircled by a *double* row of black boulders. The circles flanking the main tomb on either side consisted of *single* rows of stones somewhat smaller in size. The appearance of this small group suggested that the centre tomb was perhaps that of some chieftain, who had been buried with his wives or favourite children, apart

from his followers, in a quiet and specially-selected spot. It was accordingly determined to open the centre and most imposing-looking tomb. After digging about five feet through a mass of loose stones and earth, the workmen came upon fragments of pottery. On the earth being cleared away for a few more inches, a number of rusty iron implements were exposed, some of which were found on examination to resemble closely those discovered by the Rev. Mr. Hislop, on the day of his death, in the Thakulghat barrows some twenty miles south. The iron spear-heads and arrow-heads were indeed exactly similar to the Thakulghat weapons in the Society's Museum. Two battle-axes, with curious iron bands for fastening the axe to the handle, were also found in the collection, which also included a horse's snaffle, a miniature model in iron of a bow and arrow, and a pair of curiously-shaped pieces of iron, slightly curved, with loops at either end for fastening thongs or chains. Regarding the model of the bow and arrow, rough as it was, there could be no doubt. The snaffle, but for the thick rust, looked suspiciously modern. At first it was difficult to say for what purpose the curved piece of iron had been used. Much more pottery was found, but in fragments, the vases or urns having evidently been destroyed by the stones and rubble with which the graves had been filled in. No charcoal was found. At a further depth of three feet the trap rock was reached, and as it was evident that the tomb contained no inner chamber or Kistvaen, it was determined to abandon it, and to commence excavating another. When he, Mr. Rivett-Carnac, left Nagpore, the excavation of the neighbouring tombs had just been commenced. With reference to the implements discovered, the spear-heads and other weapons were, as he had already mentioned, similar to those found in tombs of the class in other parts of the country. To the model of the bow and arrow found in the tomb, considerable interest attached. Herodotus mentions that it was the custom of the Scythians to bury with their warriors models of their arms—and this discovery would perhaps tend to support the view adopted by Dr. Wilson and other learned authorities, that these burial-places were of Scythian origin. With regard to the horse's snaffle it certainly resembled that in use in the present day—but it was to be remembered that our snaffle was about the very simplest and convenient bit that could be put into a horse's mouth, and consequently it had not perhaps undergone any great change in shape since the days of the Scythian horsemen. When the snaffle was unearthed there was also a doubt as to whether the Scythians were in the habit of burying horse-furniture and trappings with their dead. All doubts on this point were, however, set at rest by some passages he had recently come across in Tegnér's grand old legend of the North, "The Saga of Frithiof the Bold" an old Scandinavian Saga immortalized by Bishop Tegnér, and translated from the

Swedish by Professor Stephens. In the notes to the legend it is mentioned that the burial customs of the Scandinavians and Scythians were the same.

In the poem the "barrows" similar to those found in this country are constantly alluded to. It was on the mounds, raised over the remains of their Chieftains, that meetings on important occasions were held, and it was on the barrow of their father, King Bele, that the brothers of Ingeborg received Frithiof before he set off on the expedition, his adventures during which are the chief incidents of the poem. In one of the last cantos, "King's Dirge," which contains an account of the burial of the good old king, the custom of burying, not only the horse accoutrements but also the horse itself, by the side of the Chieftain, is referred to in the following lines :—

"Th' hero-sprung Sov'reign
Sits in his barrow,
Battle-blade by him,
Buckler on arm :—
Chafing, his courser
Close to his side neighs,
Pawing with gold hoof
The earth-girded grave."*

In the copious notes which Professor Stephens has added to his translation of Tegnér's great work, and which contain many interesting accounts of the beautiful Aslauga, and other favourite characters celebrated in the wild legends of the North, an extract is given from "Bell's Journey from Petersburg to Peking." Here Mr. Bell describes the barrows which he saw in Poland, Russia, and again on the Steppes of Tartary ; and as he goes into the details of the articles exhumed by the Russian Government from one of the cairns in Tartary, it is impossible not to be struck with the great resemblance between the discoveries made in Tartary and in Central India. The Russians found the tomb of the Chieftain ; with him were buried the arms, the horse, and the bridle and stirrups of the rider. He, Mr. Rivett-Carnac, had no doubt now that the curved iron articles discovered near Nagpore were indeed the stirrups of some Scythian horseman. The barrows were known to exist all through Central India. He had great hopes that further enquiries might result in the Society being able to follow these tombs right through the Peninsula, and perhaps link them on at last to the similar remains found in Tartary to which he had just alluded, so that a complete chain might be formed by which the inroads of these early tribes could be clearly traced.

* Professor Stephens' Translation of Frithiof's Saga.

ANCIENT REMAINS AND CUP MARKS IN CENTRAL INDIA.

In connection with the specimens of implements forwarded by Col. Saxton, the President announced that Mr. H. Rivett-Carnac had brought a fine collection of similar relics from Central India, and would lay them before the meeting.

Mr. H. Rivett-Carnac, in exhibiting these specimens of iron and other implements found in tumuli near Nágpúr, observed that he would not trouble the members with any lengthened description of the tumuli from which these remains had been obtained. Detailed accounts of the Cromlechs, Kistvaens, and Barrows of Central and Southern India had, from time to time, appeared in the Society's Journal, and in the Journals of the Bombay and Madras Societies, and the existence and character of these remains were doubtless well known to many gentlemen present. He would, however, desire to remind the meeting of the interesting point noticed by Colonel Meadows Taylor, who examined many Barrows in the Deccan, and who on his return to England visited and excavated some of the old tumuli in the North of England, and found an extraordinary resemblance to exist between the remains in India and in Europe.

Colonel Meadows Taylor in his paper, read before the Royal Irish Academy, had brought out in a most striking manner, the perfect similarity that exists between the Barrows and Cromlechs of the Deccan, and the tumuli of Western and Northern Europe. Nágpúr is situated on the eastern border of the trap formation of the Deccan, and here, where the stone most ready to hand consists of basalt, the tumuli are found in the shape of mounds surrounded by a single or double row of trap boulders, and similar in shape and construction to the well known Barrows of Scotland, the North of England, and other parts of Europe. Further to the East of Nágpúr on the sandstone formation, the form of tumuli changes, and Cromlechs or Kistvaens, similar to the "Kitscoty House" of Aylesford, take the place of the Barrows.

And it is not only in the shape of the tumulus that the most extraordinary identity is to be traced between the prehistoric remains of India and Europe, but in the manner in which the bodies are buried in the urns and in the ornaments, and weapons placed with the urns within the tomb, the same striking resemblance is to be traced between the discoveries made in both countries. The specimens before the meeting were, Mr. Rivett-Carnac said, but a few of a very large number of articles found in these Barrows, but they were quite sufficient to establish the identity referred to. These iron implements were invariably found together with pottery urns,

or with fragments of them, for it was extremely difficult to get out the urns intact. Most of the specimens in the collection spoke for themselves, but the iron snaffle, the stirrups, the spear and other accoutrements of the warrior, whose tomb had been examined, were, he ventured to think, of special interest. He would also draw attention to a very perfect specimen of an iron battle-axe. It would be seen that the iron crossbands by which the axe was fastened to the handle were still intact. A reference to the Illustrated Catalogue of the Royal Irish Academy would shew that this specimen had an exact counterpart in an axe found in Ireland, in a Barrow similar to that from which the axe now exhibited was exhumed. And the same remark applied to the bangles and other articles in the collection, which would be found to resemble, in every respect, remains discovered, under exactly similar circumstances, in Ireland, which remains were figured in the Catalogue above referred to.

Another circumstance was perhaps worthy of notice, and might be useful in assisting to determine the age to which they belonged. On the sculpturings of the Bhilsa and Oomraoti Topes, a people, who would appear to be distinct from the Aryans, were there represented wearing bangles, and armed with battle-axes similar to those now exhibited.

There was yet another circumstance connected with the remains which was perhaps as interesting as any of the points above noticed of the similarity between the remains in India and Europe. And he was not aware that this point had been noticed before. His attention had first been drawn to it by a work entitled "Archaic Sculpturings" written by Sir James Simpson, the well known antiquarian. This book contained an account, with illustrations, of peculiar marks found on the monoliths, which surround the Barrows in Northern Europe. Now although he (Mr. Rivett-Carnac) had often visited the Nágpúr tumuli, and noticed some indistinct markings on the weather-worn stones, he had never paid any very particular attention to them, until he saw the engravings in Sir James Simpson's work. He was then immediately struck by the further extraordinary resemblance between the so-called "cup marks" on the monoliths surrounding the Barrows in England, and the marks on the trap boulders which encircled the Barrows near Nágpúr. Indeed, if the members interested would be so good as to compare the sketch of the Barrows and cup marks given in Sir James Simpson's book, with the tracing laid before the meeting of the "cup marks" on one of the Barrows at Junapani, near Nágpúr, this extraordinary resemblance would at once be apparent. The identity between the shape and construction of the tumuli, and between the remains found in the tumuli of the two countries had already been noticed, and nowhere was a third, and still more remarkable point, the discovery on these tumuli of markings which corresponded exact-

ly with the markings found in the same class of tumuli in Europe. He would not trouble the meeting now with any theories founded on this extraordinary resemblance. A paper containing a full account of the discoveries, with sketches of the tumuli, the remains found therein, and the markings on the stones would soon be published, and all who took any interest in the subject would find therein such information as he was able to give. The subject of the similarity of the prehistoric remains of the Deccan and Northern Europe had also been treated of, most exhaustively, by Colonel Meadows Taylor in a paper which was doubtless familiar to most of the members. But the "cup markings" to which allusion had been made above, had not, he believed, been noticed before, and they formed, he would submit, another and very extraordinary addition to the mass of evidence which already existed in favour of the view, that a branch of the nomadic tribes who swept, at an early date, over Europe, penetrated into India also.

These tumuli were to be traced from Southern India, through the Deccan, to Nágpúr. He had not as yet been able to ascertain whether they were found in the country lying between Nágpúr and the Punjab. But on the frontier they were met with in large quantities, and from thence they could be traced, as if marking the line of progress of some great tribe, through Central Asia and Russia into Northern Europe.

Enquiries were now being made on the subject, and he hoped soon to be able to inform the Society of the result of further discoveries, and also that the chain of tumuli, the record of the movements of tribes between Central India and Northern Europe, was complete.

A lengthened discussion ensued in which the Hon'ble Mr. E. C. Bayley, Mr. H. F. Blanford, the Chairman and several other members took part.

Dr. A. M. Verchère drew the attention of the meeting to a sketch which was published with his paper in the Journal of the Society for 1867, (Pt. II. p. 114). His suggestion then was that the small holes, or cups, in large boulders between Jubbee and Nikkee on the Indus, had been either made by a race of men, or that they had a glacial origin. He then rather was inclined to the latter than to the first hypothesis, but it is possible that those excavations had been executed by men. There are at present no settlements of any kind in the close neighbourhood.

Extract from Dr. Verchère's paper published in the Journal of the Asiatic Society of Bengal for 1867. Part II. p. 114.

The description of the deposition of beds subsequently to the great upheaval has been given incidentally in the preceding paragraph; the glaciers began to melt, great lakes were formed in several localities. The

Kashmir valley is a good example, Rukshu is another, and so is Abbottabad valley. These lakes at first fed large rivers, and both lakes and rivers had a considerable power in carrying mud, sand and boulders and thus raising their beds by several hundred feet; but as the waterfall diminished, the lakes and rivers diminished also, and the rivers soon began to cut for themselves deep ravine-like beds in the middle of their ancient bottoms, leaving on each side a great river-terrace.

Before the rivers had lost their great volume, however, and while they filled the whole of their original beds, they floated icebergs of sufficient dimensions to carry blocks of stone of great size. The Salt-Range for a time intercepted the free passage of the waters towards the south and a shallow lake filled the whole country between it and the Munee Range.* On this lake floated the icebergs brought down by the rivers, drifting gradually to the south, and finally grounding near the Salt-Range or averted by it. Thus we see between Jubbee and Nikkee large erratic blocks, being porphyry, resting on the top of the old alluvium ; and we find similar but smaller blocks imbedded in horizontal taluses of debris which have been piled up in horizontal layers against the hills of Maree on the Indus. These blocks are not water-worn, but present either flattened or scratched surfaces ; the ground all over that district is covered with boulders of porphyry, green-stone, felstone, &c., but these boulders are well rounded and are easily traced to disintegrated beds of Miocene conglomerate. The erratic blocks are very different in appearance, and have the striking, or somewhat odd and *déplacé* aspect peculiar to erratics. One of them, three miles south of the village of Thrapp, measures 6 feet 4 inches by 7 feet 4 inches and 5 feet. There are four or five smaller blocks near it, but none are rolled ; they are all of the gneissoid porphyry of the Kaj-Nag. The largest presents the very singular appearance of having its greatest flat surface (not vertical) marked with a number of cup-like holes of various size, from 6 inches across to the size of a walnut, and from $1\frac{1}{2}$ to 2 inches deep. There are from 70 to 75 of these cups. They resemble white grounded with rounded holes of cups, as water would make by dropping. Whether these cups are a glacial effect, or have been made by a race of men for some unknown purpose, is what I am unable to decide. I am inclined to the first hypothesis.

* The damming of the water behind the Salt Range and the Chitta Range was the cause of that thick deposit of silty mud now cut by ravines, which has been the source of so much difficulty and expense in making the great Trunk Road between Jheelum and Attok. A similar damming occurred in the Huneepor valley and several other localities, but to a less degree.

FIGURE OF BUDDHA RECENTLY FOUND AT SARNATH.

By H. Rivett-Carnac, C. I. E., M. R. A. S., F. S. A. &c.

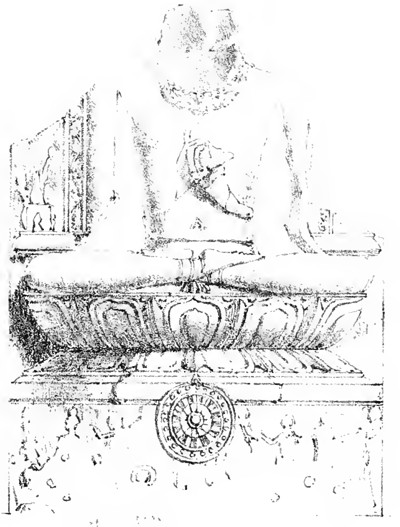
Asiatic Society of Bengal, January 1878.

In the account of the Buddhist remains at Sarnath, near Benares, published in the Journal, Asiatic Society, Vol. XXXII, General Cunningham noticed the desirability of clearing away the rubbish at the foot of the great *Stupa* called *Dhamek*, as he was of opinion that possibly some of the statues of Buddha which once occupied the eight niches of the tower might be found among the debris. It may, therefore, be of interest to the Asiatic Society to learn that during a visit paid to Sarnath last Christmas by my wife and myself, in company with the Rev. J. C. and Mrs. Murray-Aynsley, who are travelling through India, a stone figure of Buddha was discovered amongst the ruins, in as nearly as possible the exact position indicated by General Cunningham. Whether this figure once occupied one of the eight niches of the tower, or belonged to some other portion of the building, may perhaps be determined with the help of the sketch now sent, together with a brief notice of the figure and a statement of the position in which it was found.

The figure was discovered by Mrs. Murray-Aynsley, whose attention was attracted by the pattern of a necklace carved on a piece of sandstone, which she found embedded in the debris on the south side of the trench cut by General Cunningham, many years ago, leading to the passage on the east side of the *stupa*. The rain has apparently washed away the soil from the sides of the trench and had left this fragment exposed, at a depth of about two feet from the level of the top of the rubbish by which the tower is now surrounded. At first it was thought that the sculptured necklace was a small fragment only, but on trying to extricate it, it was found necessary to remove the stones and bricks at the top and sides, and by degrees the figure, of which a drawing is annexed, (Plate I) was with some little difficulty extricated.

The block is of red Chunar sandstone, of the same character as that employed in the well-known tracery which still ornaments the *stupa*. The sketch has been drawn to scale, and it will be seen that the stone, in its present state, is 2 feet, 4 inches in height by 1 foot, 8 inches in breadth, and consists of a carved base 6 inches in height surrounded by a further leaf-shaped base 5 inches in height, on which is a seated figure of Buddha. The block has been much broken, but in the centre of the lower base the lotus, "wheel-ornament" or "disc," so often seen on Buddhist carving, is intact. The remains of what would appear to have been a pedestal, or support to the disc, similar to these which support the discs on the summit of the Northern Gateway of Sanchi (see frontispiece, Fergusson's Tree and

From Proceedings, As: Soc. Bengal, 1878



H Rivett-Carnac del.

FIGURE OF BUDDHA FOUND AT SARNATH.

Scale 1½ Inch = 1 Foot

Serpent Worship) can still be distinguished. On either side of the disc are the remains of three figures. These figures have been much defaced, but it would appear that, when intact, each figure had an arm placed on the shoulder of its neighbour, an arrangement similar to what I recently noticed on some old Buddhist pillars at Benares.

The legs of the seated figures of Buddha are in fair preservation. They are crossed in the conventional attitude. The soles of the feet are turned up, and in the centre of each is carved a small flower (?). The arms have been broken off, but the thumb of the right hand is in good preservation, and the remains of the finger of the left hand are discernible, suggesting that the figure was in the conventional form of "Buddha the teacher" as described by General Cunningham. The necklace which first attracted Mrs. Murray-Aynsley's attention, is delicately carved and is in good preservation. The head has been broken off, and, as with it the upper portion of the block has been carried away, it is impossible to say whether the head was ever surrounded by an aureole or not.

At the back of the figure, the carved tracery which forms a panel on each side of the seated Buddha, is preserved, and on the left hand side is found the lower portion of a small carved figure, standing on a bracket carved out of and forming part of the original block. Our time was limited, but some search was made in the hope of finding fragments of the head aureole, or of other parts of the carving. Nothing was round. Careful and more extended search would, however, doubtless bring many other interesting remnants to light, and possibly the missing head of the figure.

On the sketch will be found, drawn in blue, the outline of the niche, and pedestal of one of the eight niches of the *stupa*, each niche being, according to General Cunningham, 5½ feet in length, and the same in breadth. The stone pedestals, which are still *in situ* in most of the niches, are a little more than 1 foot in height and nearly 4 feet in length. The outlines of niche and pedestal have been drawn to scale, below and around the sketch of the seated figure, so as to assist in determining whether this is one of the missing figures belonging to the niches.

At first sight the figure will, doubtless, be pronounced somewhat small, and it will suggest itself that, as each niche was provided with a large pedestal, the carved base below the figure, as shewn in the drawing, would be necessary. Then, too, it will suggest itself that the figures on the lower pedestal, are small for a piece of sculpture to be placed on a niche at a height of 24 feet from the ground.

General Cunningham, as the following extract will shew, expected that the figure of the niches would be of life size. He wrote in the Volume of the Society's Journal above quoted.

"The lower part of the monument has 8 projecting faces, each 21 feet, 6 inches in width, with intervals of 15 feet between them. In each of the

faces, at a height of 24 feet above the ground, there is a semi-circular headed niche, $5\frac{1}{2}$ feet in width and the same in height. In each of the niches there is a pedestal, one foot in height, and slightly hollowed on the top, to receive the base of a statue, but the statues themselves have long disappeared, and I did not find a fragment. There can be little doubt, however, that all the 8 statues represented Buddha the preacher in the usual form, with his hands raised before his breast, and the thumb and forefinger of the right hand placed on the little finger of the left hand, for the purpose of enforcing his argument. Judging by the dimensions of the niches the statues must have been of life size."

Although the figure now found is smaller than might be expected, still the following points are in favour of its having once occupied one of the niches. It was found in the position indicated by General Cunningham, *i. e.*, amongst the debris at the base of the *stupa* almost immediately below a niche, and in just the position in which one might expect to find a figure which had been thrown down from the niche and broken by Mahomedan iconoclasts, or hostile Bráhmans.

The stone is of the same description as that with which the other portions of the structure are ornamented. Although the carving on the head and base of the figure is somewhat minute for an ornament to be placed at a height of 24 feet from the ground, still, equally delicate treatment of detail is sometimes met with in similar positions on Buddhist buildings. Again it is not improbable that the head was surrounded by an aureole, which would bring the total height of the carving up to $3\frac{1}{2}$ feet. This added to another foot, the height of the pedestal, (which is still to be seen in position) would bring the sculpture within 1 foot of the top of the niche. At the same time it must be admitted, that the breadth of the figure is hardly in proportion to the size of the niche.

The subject is, however, one on which it is hoped that Members of the Society will be able to form an opinion from the information now placed before them.

The figure has been taken into Benares, and made over to Captain Boileau, R. E., who has been good enough to take charge of it, until the wishes of General Cunningham as to its disposal are known.

It appears desirable to take advantage of the present opportunity to bring to the notice of the Society, that, unless steps are promptly taken to preserve the outer stone carving of the Dhamek *stupa*, this unique specimen of ancient Indian art will soon be seriously damaged. When we were at Sarnáth, some of the large stones of the well-known beautiful tracery appeared to be on the point of falling out.

The expenditure necessary for saving this portion of the building from ruin would be inconsiderable *now*. If the stones are once allowed to fall to the ground, the expense and difficulty of restoration will become enormous.